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studies on native woods used for railroad ties and the fungi which destroy them, portions of which he has given before this club and other organizations. The plates are reproductions of his wonderful photomicrographs, and in most cases are excellent. The woods discussed and illustrated are those of *Quercus alba*, *Castanea vulgaris*, var. *Americana*, *Chamæcyparis sphæroidea*, *Pinus palustris*, *Tsuga Canadensis*, *Larix Americana* and *L. occidentalis*.

Walking-fern in Iowa.—W. R. Lighton. (West Amer. Sci., iii., p. 193.)

Describes the occurrence of *Camptosorus* on sandstone near Ottumwa, Wapello Co.

Botanical Notes.

On a Fossil Marine Diatomaceous Deposit from Oamaru, New Zealand.—E. Grove and G. Sturt, F.F.R.M.S. (Journal of the Quekett Microscopical Club, Sept., '86, Jan., '87, May, '87, Aug., '87; pp. 50; seven plates, containing 123 figures.)

This series of papers, just completed, is a most valuable and exhaustive report upon this unique deposit. It would seem as though the microscopic life of these far away islands of the Pacific presents as strange and unexpected features as do the higher plant forms and the fauna of those regions. Altogether the authors have recorded 273 species found in the deposit. Of these, they have figured and described 118 species as new. This may appear to be a large number, but an acquaintance with the deposit, and a careful comparison of the species figured with actual specimens, will afford convincing testimony that the number is not too great. Indeed, one cannot help admiring the conscientious care which the authors have exhibited in the investigation, and their careful regard for the rights of other investigators. Not the least attractive feature of the paper is the plates, which are remarkably well executed. C. H. K.

Lichenotheca Universalis. Under this title Professor Hugo Lojka, of Budapest, had projected the issue of a series of specimens illustrating the lichen flora of the earth. He had enlisted as contributors a large number of botanists and collectors, and

had issued five fascicles of fifty numbers each, and had others in preparation, when his death, which occurred Sept. 7th of this year, after a painful illness, has, it is to be feared, put an end to this important undertaking.

The parts of the world chiefly represented in the fascicles already issued, are: Europe, Southern Africa, North America, New Holland and New Zealand. This country is represented by twenty-eight species. Two of them, *Calicium faculatum* and *Lecidea (Biatora) holopolia*, are unedited species of Tuckerman from the Pacific coast. Two others, *Umbilicaria corrugata*, Nyl., from Newfoundland, and *Verrucaria (Pyrenula) aspistea*, Ach., from New Jersey, have not been previously published as belonging to this country. No. 17, *Lecanora miculata*, Ach., described by Tuckerman in his synopsis, is not present. But, after the publication of his synopsis, Prof. Tuckerman expressed the opinion that it was only *L. subfusca*. A considerable number of other North American species had been sent to Prof. Lojka, and would have been issued in the fascicles for this year, which it is to be hoped, were in a state of sufficient forwardness to be distributed.

The classification and nomenclature of this collection is that of Nylander, and it will require some knowledge of lichen systems to place many of the species in the genera adopted by Tuckerman. Two of the finest and rarest species are *Endocarpon (Dermatiscum) Thunbergii*, and *Parmelia (Omphalodium) Hottentum*, from the Cape of Good Hope, which those who have the good fortune to possess the collection, can compare with the single American species of these genera. Prof. Lojka does not seem to have known Nylander's genus *Dermatiscum*, but the apothecia of the specimens of *D. Thunbergii* are distinctly *Lecanorine* in his specimens. The name *Cladonia lacunosa* ought not to have been given for *C. Boryi*, Tuck., the name under which the species was first described and published, the other having been merely a herbarium designation.

No. 186 is given as *Graphis angustata*, Eschw., a Brazilian lichen, the spore character of which, so far as I know, has not been investigated, and which is therefore, like most of the species of the older botanists, especially the tropical ones, uncertain. It is very unlikely that a distinctively Brazilian *Graphis* should occur

in New Jersey, and I can only look upon the lichen as a depauperate state of the very common *G. scripta*. *Pyrenula aspistea*, Ach., is given on the authority of Nylander, although in his *Expositio Pyrenocarpeorum* he had considered it as hardly differing from *P. nitida*, var. *nitidella*, Tck. But in his *Lichens of New Grenada* he considered it as a subspecies of *P. nitida*, differing only in its smaller spores. No. 12, given as *Umbilicaria Pennsylvanica*, from Newfoundland, is, as Nylander has pointed out in *Flora*, *U. pustulata*.

At least three sets of this collection, of which we suppose that only from twenty-five to thirty have been issued, have been sent to this country, one of them to the Smithsonian Institution, while the others are in private hands. H. WILLEY.

Annals of Botany. Edited by Isaac Bayley Balfour, Professor of Botany in the University of Oxford, Sydney Howard Vines, Reader in Botany in the University of Cambridge, and William Gilson Farlow, Professor of Cryptogamic Botany in Harvard University, Cambridge, Mass. Clarendon Press, Oxford.

This forms an important addition to the list of botanical magazines and promises to occupy a place that no other has heretofore filled. Although many doubts and criticisms have been expressed by several of the English journals, we venture to say that on this side of the Atlantic, at least, it is just what was wanted by those who have not access to a large library where all the expensive European magazines may be consulted.

A varying number of parts, issued at intervals, will complete a volume, the subscription for which will be a guinea, subscribers receiving the parts as they appear; the price of individual parts will vary according to their size and contents. The first part is marked 8 s. 6 d., and contains four original articles, occupying seventy pages, accompanied by six excellent plates.

No. 1. By H. Marshall Ward and John Dunlop. On some points in the Histology and Physiology of Fruits and Seeds of *Rhamnus* (Plates I and II.)

No. 2. By Walter Gardiner and Tokutaro Ito. On the structure of the mucilage-secreting cells of *Blechnum occidentale*, L., and *Osmunda regalis*, L. (Plates III and IV.)

No. 3. By Agnes Calvert and L. A. Boodle. On laticiferous tissue in the pith of *Manihot Glaziovii*, and on the presence of Nuclei in this Tissue (Plate VI).

No. 4. By W. H. Gregg. Anomalous thickening in the roots of *Cycas Seemanni*, R. Br. (Plate VI).

Under *Notes*, F. W. Oliver calls attention to a "Phenomenon analagous to leaf-fall" in *Rubus australis*; J. R. Vaizey describes some interesting experiments with Eosin on *Polytrichum formosum*, Hedw., and *Splachnum sphaericum*, L., in determining the "Transpiration of the Sporophore of the Musci;" J. H. Blake describes the "Prickle-pores of *Victoria regia*;" Agnes Calvert, the laticiferous tissue in the stem of *Hevia Braziliensis*, and Isaac Bayley Balfour discusses the terms "sporophore" and "sporophyte."

Under *Reviews*, that of "Sachs' Lectures on the Physiology of Plants," translated by H. Marshall Ward, occupies seven pages, and will be read with interest by all who have not the original.

It concludes with a Record of Current Literature, of forty-one pages, including books, pamphlets and periodical literature, arranged according to countries and magazines. This record has been severely criticised by the Journal of Botany for the omission of the initials of authors. It does bring about some confusion if there be no opportunity of verifying from the originals.

A Correction.—Dr. Watson calls our attention to a mistake in the Report of the Proceedings of the Botanical Club, A. A. A. S. (this volume, p. 209), where the White Mountains are given as a locality for *Arabis petræa*; the species has not yet been found in New Hampshire, though it probably will be.

Proceedings of the Club.

The regular monthly meeting was held October 11th, Dr. Newberry in the chair and twenty-eight persons present.

Mrs. Henry Herrmann, Robert G. Eccles, M.D.; M. L. Delafield, Jr.; G. Degener and Miss Jeannette B. Greene were elected Active Members.

Miss Susan M. Hallowell, of Wellesley College; Mrs. Katharine B. Claypole and Prof. E. W. Claypole, of Akron, Ohio; Dr.